User Guide

Warehouse Layout Tool (wLOT)

Charlie's Angels

Version 7

Version History

Version Number	Item	Modified by	Modified Date
1	Create User Guide	CHOY Wei Feng	10th September 2008
2	Improved on the "Introduction" Added a list of terms (Appendix A) Added contact information	CHOY Wei Feng	11th September 2008
3	Modified the Parameter Explanations in the New Project Wizard Form	Prasanna APURVA	11th September 2008
4	Improve user guide based on previous testing	Yanice Mako KUSUMA	6th October 2008
5	Added Installation guide	CHOY Wei Feng	22nd November 2008
6	Added System Requirement	CHOY Wei Feng	25th November 2008
7	Updated System Requirement Updated screenshot in Introduction Added Tips and Hints (Section 19)	CHOY Wei Feng	21st January 2010

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1. System Requirement

The following are the minimum requirement to use wLOT:

- Windows XP or Windows Vista
- .NET Framework 3.5 (Can be installed during installation of wLOT, See Section 2)
- 1.5 GB of RAM
- Intel Celeron M 1.6 GHz

2. Installation

Before you can begin to use wLOT, you need to download wLOT. You can download it at http://wLOT.kevinsan.org. After downloading wLOT, unzip the wLOT-x.x.x.zip.

For Windows XP, proceed to Section A. For Windows Vista, proceed to Section B.

Section A – Windows XP Installation

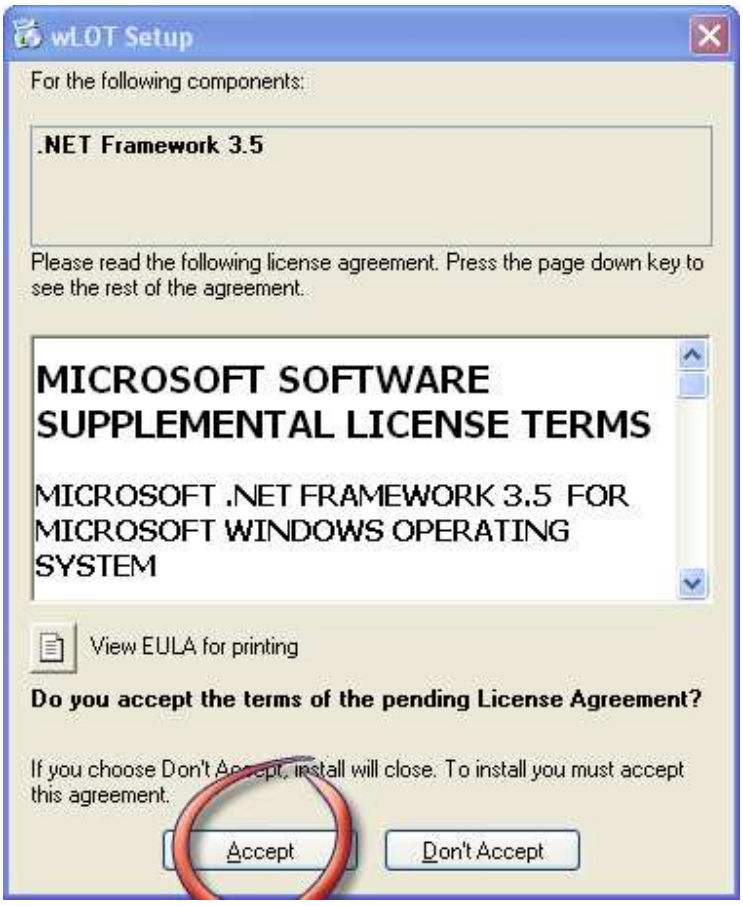
1) Open the extracted folder of wLOT and select "setup"

2) A dialog will appear. Select "Run"

Open File - Security Warning
The publisher could not be verified. Are you sure you want to run this software?
Name: setup.exe
Publisher: Unknown Publisher
Type: Application
From: C:\Documents and Settings\Kevin\Desktop\wLOT.1...
Run
Cancel
Always ask before opening this file
This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

3) Another dialog will appear to install one of the pre-requiresites of wLOT, .NET Framework 3.5. There may be other components which are pre-requiresites. It will be installed at this stage too. Click "Accept". The download and installation will begin.

The process will take several minutes.


wLOT Setup
For the following components:
.NET Framework 3.5
Please read the following license agreement. Press the page down key to see the rest of the agreement.
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
MICROSOFT .NET FRAMEWORK 3.5 FOR MICROSOFT WINDOWS OPERATING SYSTEM
View EULA for printing
Do you accept the terms of the pending License Agreement?
If you choose Don't Accept, install will close. To install you must accept this agreement.
Accept
Don't Accept

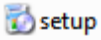
4) After installation the pre- requiresites, the actual installation of wLOT will begin. Click "Install".

Application Install - Security Warning
Publisher cannot be verified.
Are you sure you want to install this application?
Name: wLOT
From: C:\Documents and Settings\Kevin\Desktop\wLOT.1.4.beta
Publisher: Unknown Publisher
Install
Don't Install
While applications can be useful, they can potentially ha
mputer. If you do not trust the source, do not install this software.
More Information...

5) After installation, wLOT will be launched. Alternatively, you may launch wLOT from Start > Programs -> Charlie's Angels -> wLOT

Section B – Windows Vista Installation

1) Open the extracted folder of wLOT and select “setup”

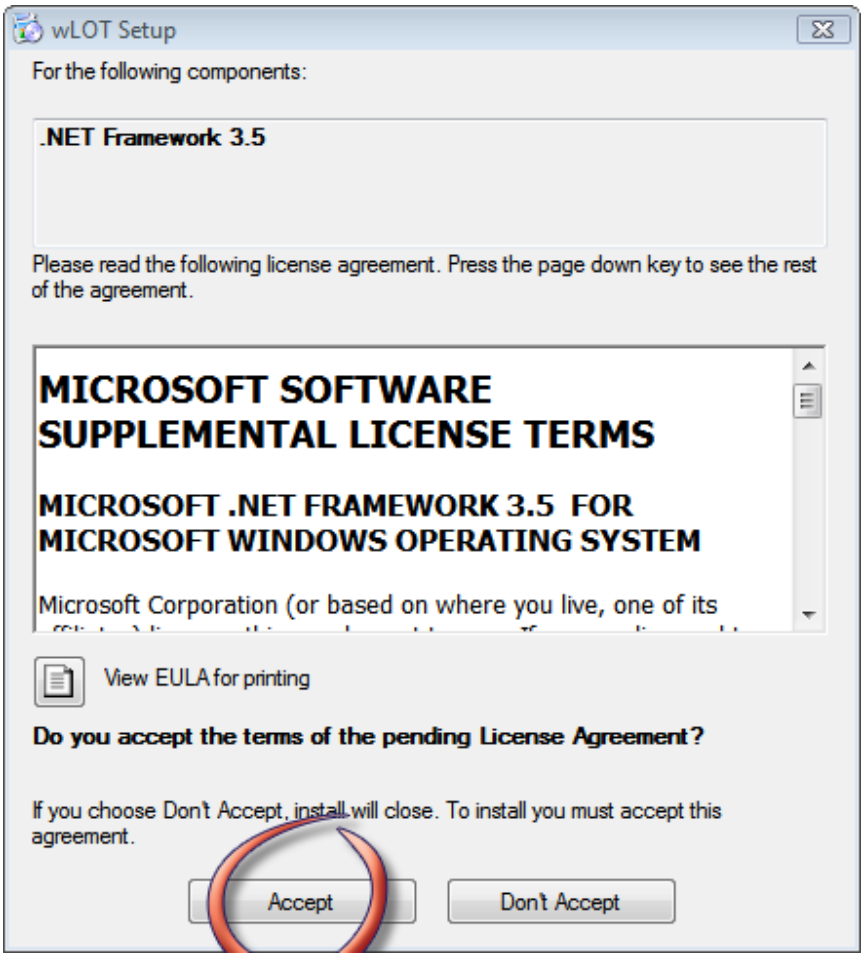


2) A dialog will appear. Select “Run”

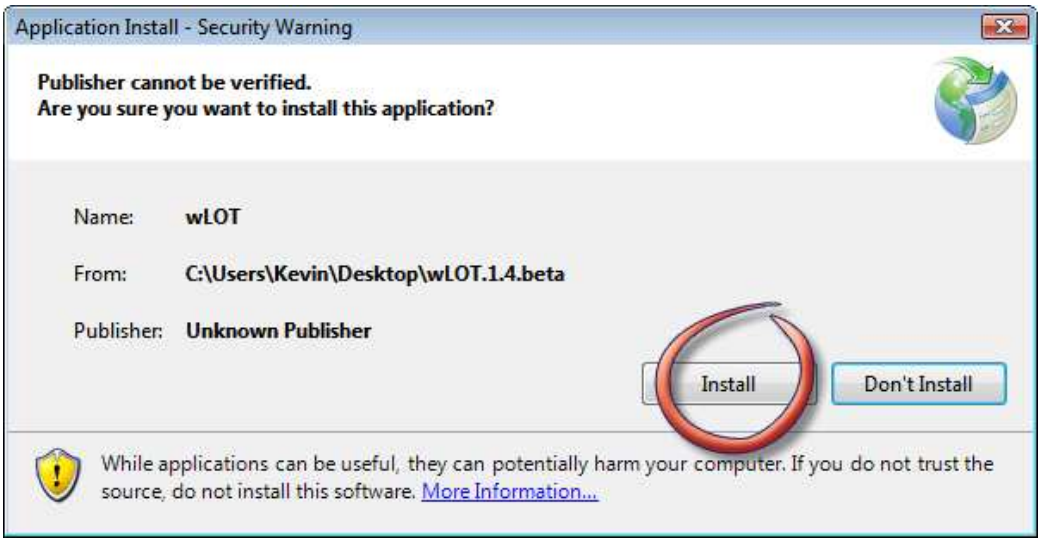
Open File - Security Warning
The publisher could not be verified. Are you sure you want to run this software?
Name: C:\Users\Kevin\Desktop\wLOT.1.4.beta\setup.exe
Publisher: Unknown Publisher
Type: Application
From: C:\Users\Kevin\Desktop\wLOT.1.4.beta\setup.exe
Run
Cancel
Always ask before opening this file
This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

3) Another dialog will appear to install one of the pre-requiresites of wLOT, .NET Framework 3.5. There may be other components which are pre-requiresites. It will be installed at this stage too. Click “Accept”. The download and installation will begin.

The process will take several minutes.

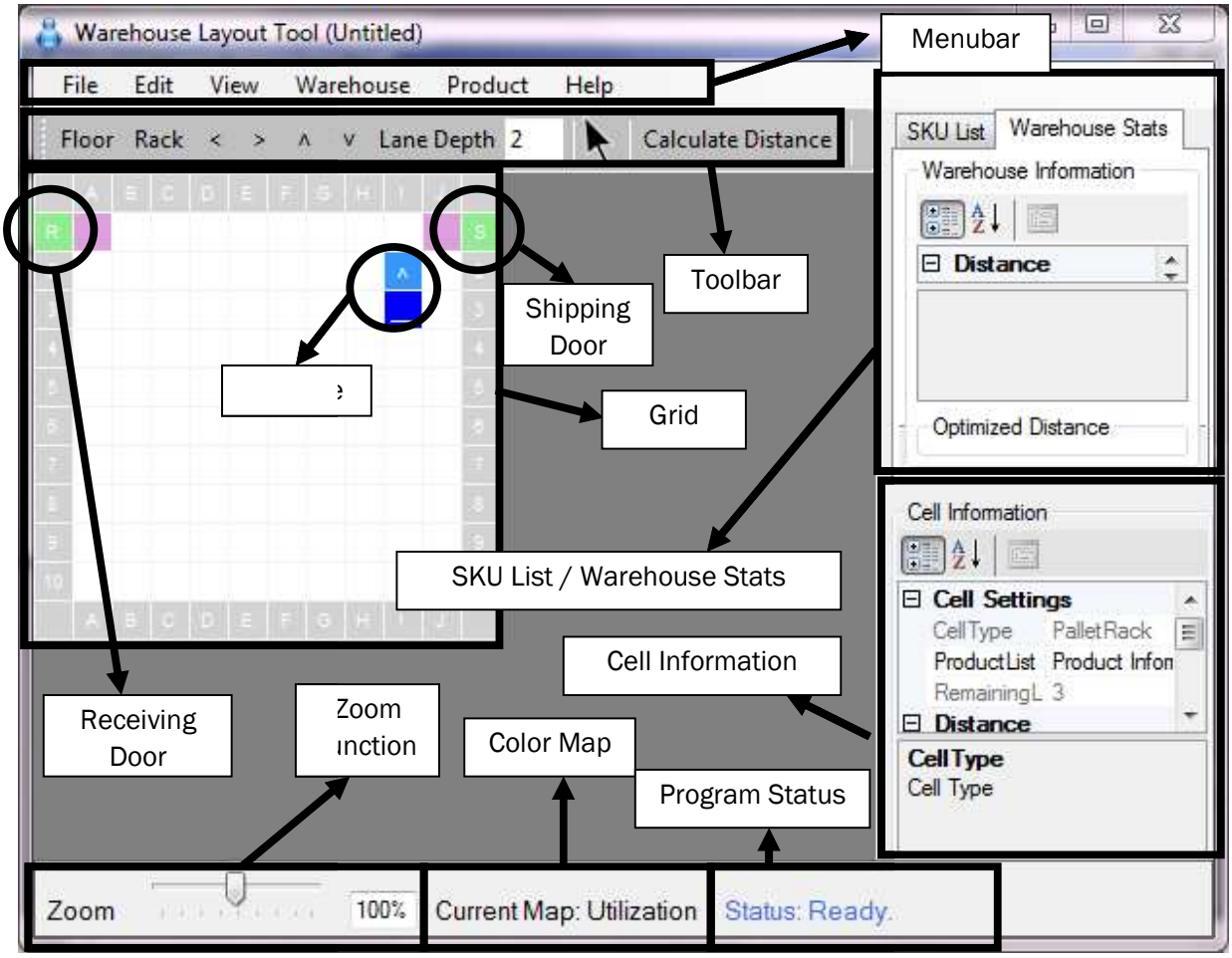

wLOT Setup
For the following components:
.NET Framework 3.5
Please read the following license agreement. Press the page down key to see the rest of the agreement.
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
MICROSOFT .NET FRAMEWORK 3.5 FOR MICROSOFT WINDOWS OPERATING SYSTEM
Microsoft Corporation (or based on where you live, one of its
View EULA for printing
Do you accept the terms of the pending License Agreement?
If you choose Don't Accept, install will close. To install you must accept this agreement.
Accept
Don't Accept

4) After installation the pre- requiresites, the actual installation of wLOT will begin. Click "Install".


Application Install - Security Warning
Publisher cannot be verified.
Are you sure you want to install this application?
Name: wLOT
From: C:\Users\Kevin\Desktop\wLOT.1.4.beta
Publisher: Unknown Publisher
Install
Don't Install
While applications can be useful, they can potentially harm your computer. If you do not trust the source, do not install this software. More Information...

5) After installation, wLOT will be launched. Alternatively, you may launch wLOT from Start icon > All Programs -> Charlie's Angels -> wLOT

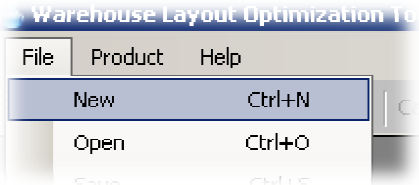
3. Introduction



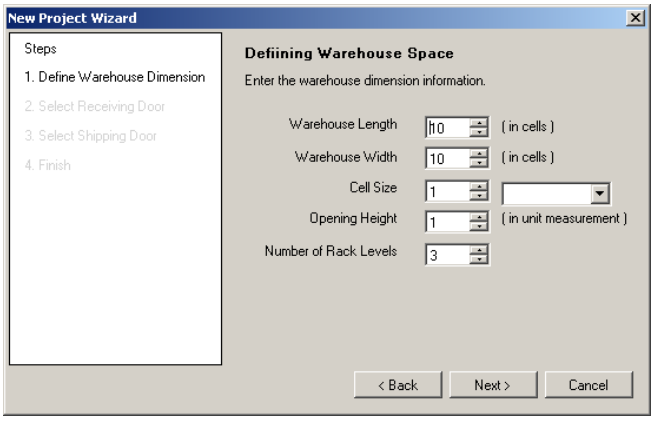
4. New Project Wizard

New Project Wizard allows you to create a new warehouse project. The wizard will guide you in entering dimension of the warehouse, the properties of pallet rack storage, unit of measurement, cell size and location of receiving and shipping door.

1) Select “File” > “New” or press “Ctrl” and “N” together.



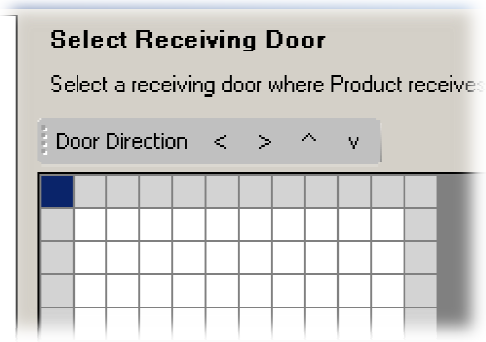
2) “New Project Wizard” will be displayed. Click “Next >”.
3) Enter the parameters of the warehouse. Click “Next >”.



Parameter Explanation

i. Warehouse Length: The number of cells that make up the length of the warehouse.
ii. Warehouse Width: The number of cells that make up the width of the warehouse.
iii. Cell Size: The size of each cell (i.e. if value = 1, each cell will 1 x 1 unit)
iv. Unit measurement: The unit of measurement (either metric or imperial)
v. Opening Height: The height of each level in a pallet rack.
vi. Number of Rack Levels: The number of levels of each pallet rack.

4) Select a Receiving Door by clicking on cell. Then specify the direction of the aisle next to the door by clicking either "<", ">", "^" or "v". Click "Next >".
   i. "<" means the aisle is on the left of the door.
   ii. ">" means the aisle is on the right of the door.
   iii. "^" means the aisle is on the top of the door.
   iv. "v" means the aisle is on the bottom of the door.



*Note: the grey colored cells are the 'boundary cells'. You **need not** specify the direction of the aisle if you locate the door at the boundary cells.*

5) Select a Shipping Door by clicking on cell. Then specify the direction of the aisle next to the door by clicking either "<", ">", "^" or "v". Click "Next >".
   i. "<" means the aisle is on the left of the door.
   ii. ">" means the aisle is on the right of the door.
   iii. "^" means the aisle is on the top of the door.
   iv. "v" means the aisle is on the bottom of the door.

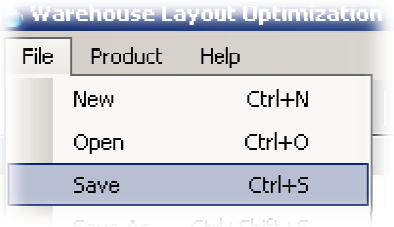
6) Click “Finish”.
7) You are now ready to create your own warehouse.

Note: If you move back to the parameter settings of the wizard, the receiving and shipping door specified earlier will be lost.

5. Save Project

Saving a project allows you to store your project so that you can continue working on your warehouse in another time.

1) Select “File” > “Save” or press “Ctrl” and “S” together

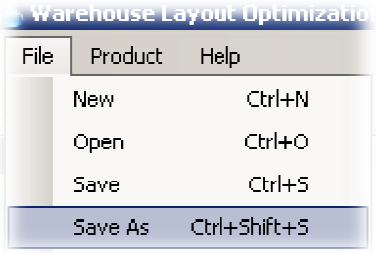


2) If you have saved the project before, you will not see a “Save Project” dialog. However, your project will be saved in the filename that you have specify before. If you would like to save as different filename, see “Save As Project”.
3) Locate a folder and enter a filename that you want your project to save as.
4) Click “Save”.

6. Save As Project

Saving as another project allows you to save your current project with a different filename.

1) Select “File” > “Save As” or press “Ctrl”, “Shift” and “S” together

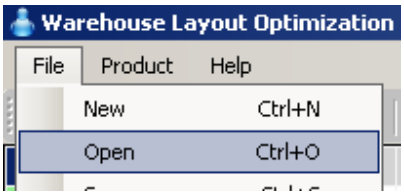


2) Locate a folder and enter a filename that you want your project to save as.
3) Click “Save”.

7. Open Project

Opening a project allows you to carry on your design of warehouse after you have saved the last time.

1) Select “File” > “Open” or press “Ctrl” and “O” together

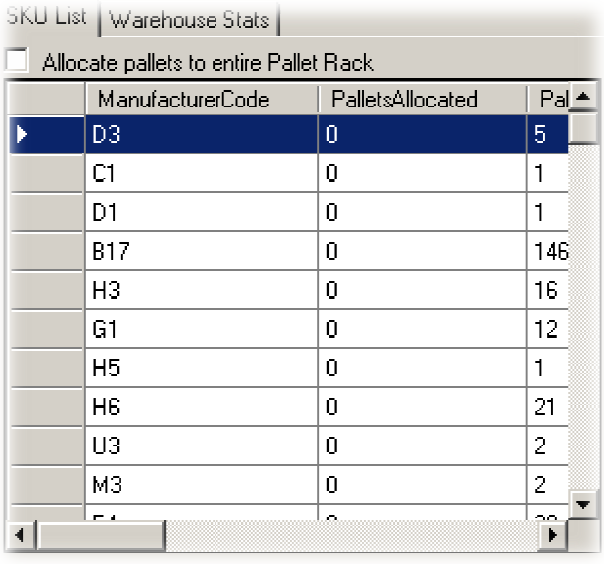


2) Locate the folder and the XML file that you saved the last time.
3) Your project is loaded.

8. Import Demand Data (.csv format)

Importing the demand data allows you work on a given past demand data in a comma-separated values (CSV) format.

1) Select “File” > “Import Data”.
2) Locate the folder and the demand data CSV file.
3) The demand data is loaded and appear on the right side of wLOT.



ManufacturerCode	PalletsAllocated	Pal
D3	0	5
C1	0	1
D1	0	1
B17	0	146
H3	0	16
G1	0	12
H5	0	1
H6	0	21
U3	0	2
M3	0	2

Note: The CSV file column header must conform to the following headings (in sequence):

1) *Manufacturer code*
2) *Number of pallet allocated*
3) *Number of pallet unallocated*
4) *Manufacturer name*

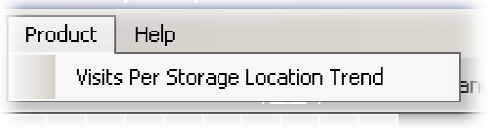
5) *Height of each pallet*
6) *The number of pallet in inventory*
7) *The number of pallet that can be stacked on top pf each other*
8) *The total number of pallet shipped in a year*
9) *The number of visits to each storage location*

9. View Demand Distribution

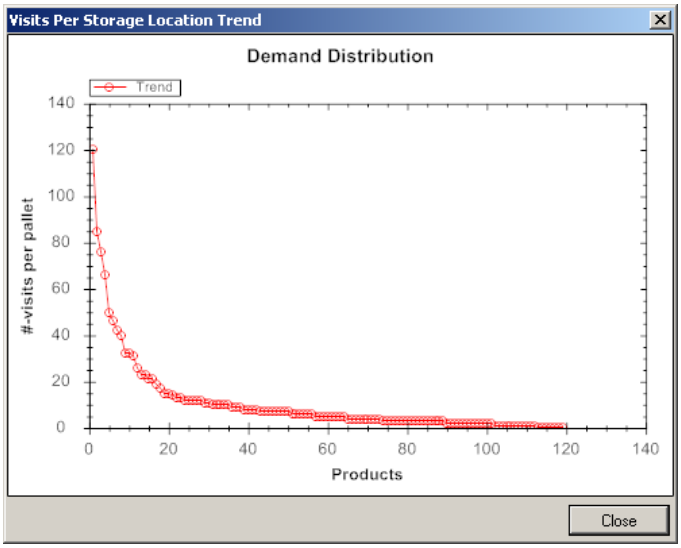
Not sure how the distribution of demand of all products looks like? This function allows you to get an overall view of the demand distribution of all products.

You must import the demand data before you can use this function.

1) Select “View” > “Demand Distribution”.



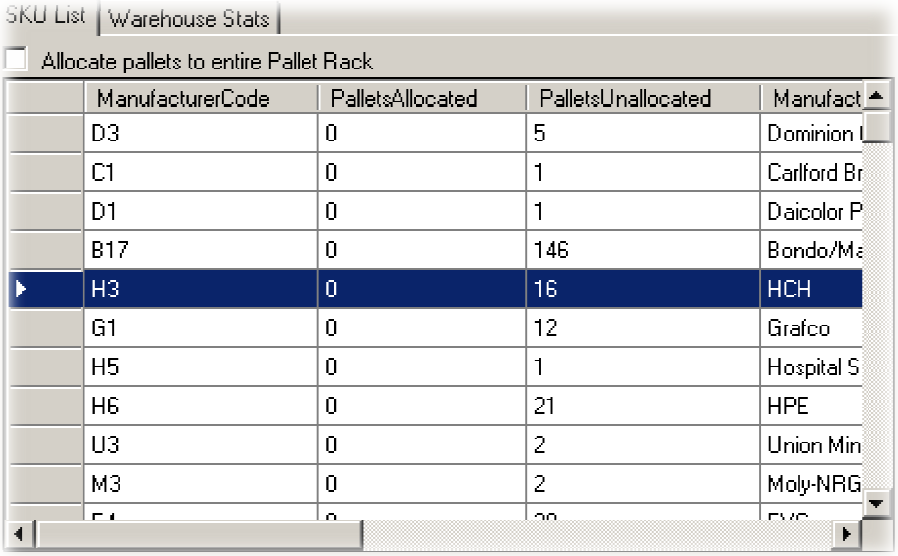
2) The “Demand Distribution chart will appear.



3) Click “Close” to go back to wLOT.

10. View Product Information

Product information gives you information on its product including calculation of visits per storage location.



	ManufacturerCode	PalletsAllocated	PalletsUnallocated	Manufact
	D3	0	5	Dominion L
	C1	0	1	Carlford Br
	D1	0	1	Daicolor P
	B17	0	146	Bondo/Ma
▶	H3	0	16	HCH
	G1	0	12	Grafco
	H5	0	1	Hospital S
	H6	0	21	HPE
	U3	0	2	Union Min
	M3	0	2	Moly-NRG

The attribute of products and its description is as follows:

S/N	Attribute	Description
1	ManufacturerCode	Unique code identifying the manufacturer
2	PalletAllocated	Number of pallet allocated into either pallet rack or floor storage
3	PalletUnallocated	Number of pallets not allocated yet
4	ManufacturerName	Name of the manufacturer
5	PalletHeight	Height of the pallet
6	Inventory	Maximum inventory in the warehouse
7	Stackability	Number of pallet that can be stacked
8	PalletShipped	Total number of pallet shipped per year (i.e. Annual demand)
9	VisitPerStorageLocation	Total visits of this product in an opening per year

11. Define Pallet Rack and Floor Storage

wLOT allows you to create empty pallet racks and floor stroage in the warehouse space.

1) Select “Rack” for pallet rack storage or “Floor” for floor storage on the toolbar.

2) Specify the direction of the aisle next to the rack / floor by clicking either “<”, “>”, “^” or “v”.
   i. “<” means the aisle is on the left of the rack / floor.
   ii. “>” means the aisle is on the right of the rack / floor.
   iii. “^” means the aisle is on the top of the door / floor.
   iv. “v” means the aisle is on the bottom of the rack / floor.

3) Change the “Lane Depth” if you want to increase the depth of pallet rack / floor.

4) Select a location on the grid you would like to place the rack / floor.

5) The pallet rack / floor storage is created.

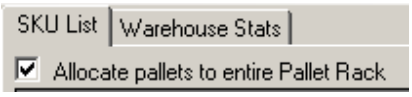
Note: the application does not allow user to drag a few storage location. Allocation of storage is only done one by one.

12. Allocate Product to Storage

After defining the storage, you can now allocate products into the storage, either allocate by rack or level.

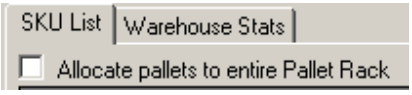
Allocate by rack

1) In the “SKU List” tab, check the “Allocate pallets to entire Pallet Rack” box. Proceed to 2).

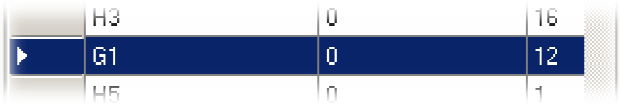


Allocate by level

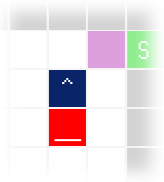
1) In the “SKU List” tab, **un**check the “Allocate pallets to entire Pallet Rack” box. Proceed to 2).



2) Select a product to allocate by highlighting a product from the “SKU List” tab.



3) Press on left-mouse button and drag into the storage you want to allocate. Note of the change of color.

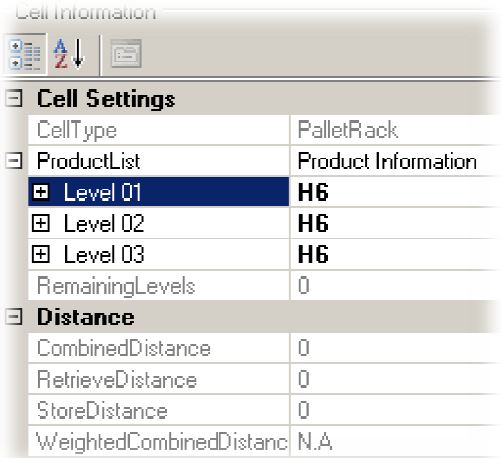


4) The product is allocated.

13. View Storage Information

Storage information gives what products are stored in this storage, the remaining levels you can use to allocate products and the distances travelled by the order pickers.

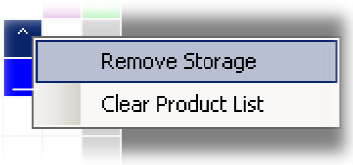
1) Select either pallet rack or floor storage on the grid.
2) In the “Cell Information”, expand the “ProductList” to view the products in the storage.



14. Remove Storage

If the storage is not where you wanted, you can remove the storage. However, that there is no products in the storage (See Remove Product in Section 13 and 14).

1) Right-click on the storage on the grid.



2) Select “Remove Storage”.
3) Storage is removed.

15. Remove Individual Product from Storage

If you want to change your mind in product allocation, you can remove one product at a time.

1) Select either pallet rack or floor storage on the grid.
2) In the “Cell Information”, expand the “ProductList” to view the products in the storage.
3) Select the product that you want to delete.

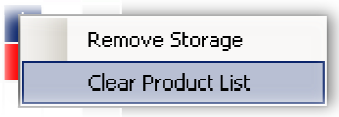
4) Right click and select “Remove Product from This Rack” or press “Delete” or “Del” button to remove the product from the storage

5) The product is removed.

16. Remove All Products from a Storage

If you want to change your mind in product allocation, you can remove all products in the storage.

1) Right-click on the storage on the grid.
2) Select “Clear Product List”.



3) All products are removed from this storage.

17. Calculate Distance

After defining some storage and product allocation, you can occasionally calculate the weighted distance of all storages.

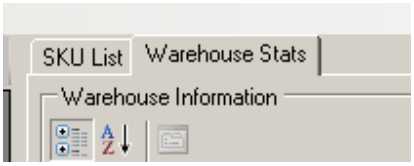
1) Select “Calculate Distance”

2) You can view the weighted distance of each storage location by viewing storage information (See View Storage Information in Section 11).
3) To view the overall weighted distances of all storages, see “View Warehouse Statistics in Section 16.

18. View Warehouse Statistics

In “View Warehouse Statistics”, you can get an overview of the storage and warehouse space utilization of the warehouse, and total weighted distance of the entire warehouse.

1) Select “Warehouse Stats” tab.



2) Warehouse statistics is displayed.

19. Tips and Hints

You can mass allocate, clear product list and remove storage space.

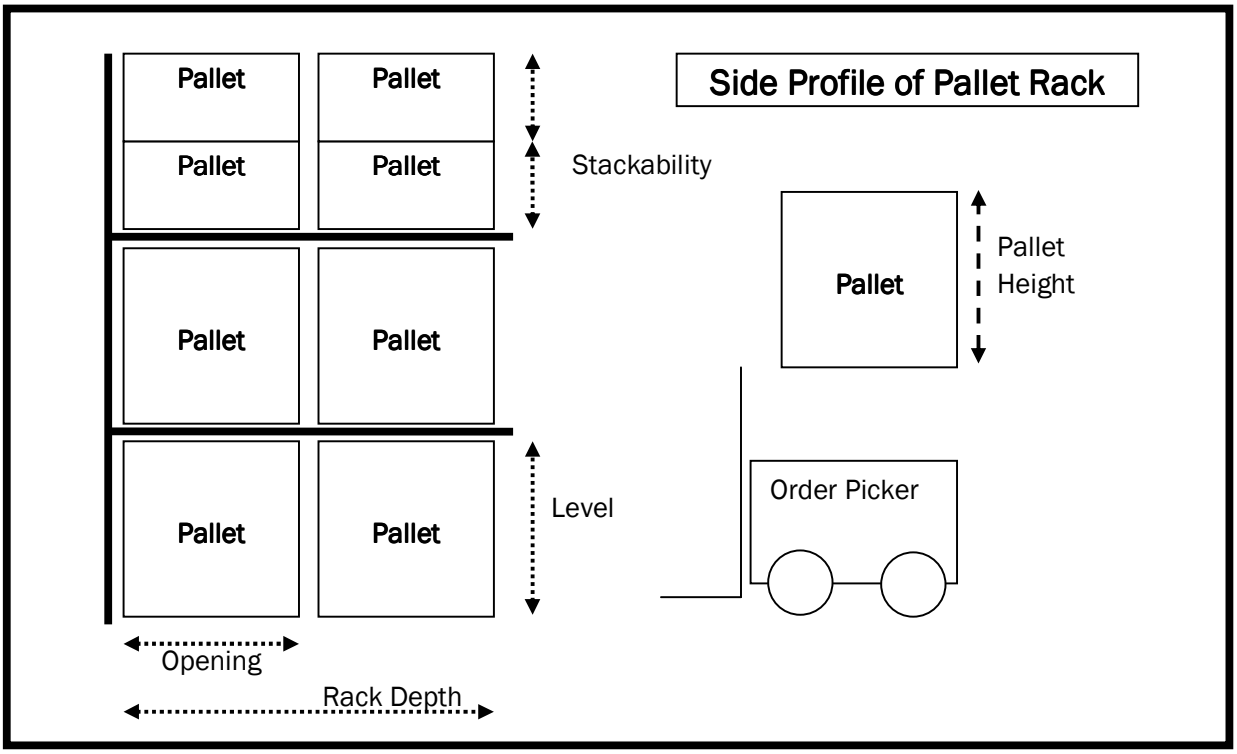
- For mass allocation, select multiple storage space by pressing your left mouse button, hold and drag, then perform actions in Section 12.
- For mass clearing of product list, select the multiple storage space, then perform action in Section 16.
- For mass deletion of storage space, select the multiple storage space, then perform action in Section 14.
- To select multiple storage space which are not sequentially, press and hold “Ctrl” key and left mouse click the storage space.

Notice the following symbols in the storage space: ‘-‘, ‘_’, ‘]’, ‘[‘? It is indication of end of that particular storage space, while ‘<’,’>’,’^’,’v’ indicates the start of that particular storage space.

End of User Manual

Appendix A – List of Terms

Pallet Rack Storage



Floor Storage